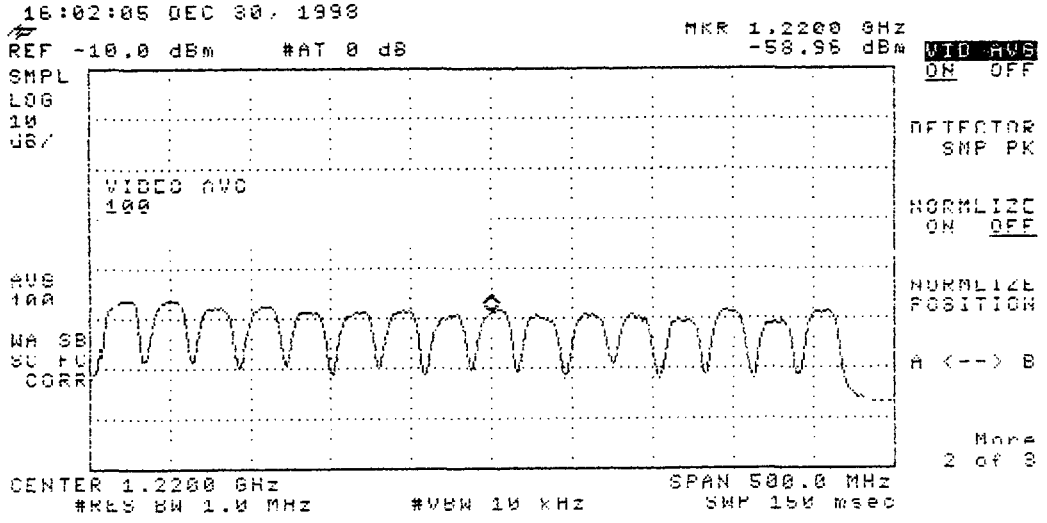
1, Estar, 12/30/98, Site-23, Boom Down

Plot-23-E

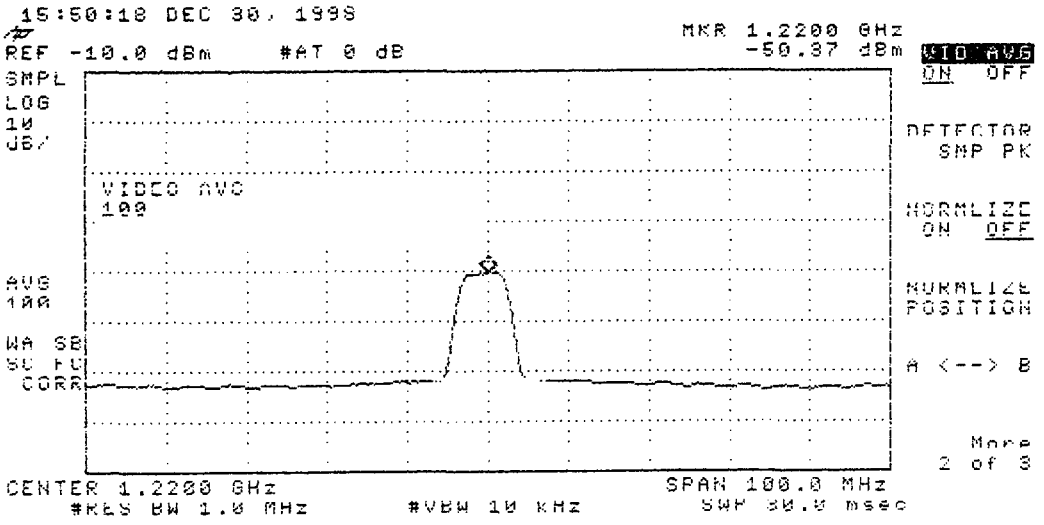


I.N.P, 12/30/98, Site - 23

Picture Good on T.V

Boom Down

Plot - 23-N



Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log 11th + Guadlupe **Rx Site No.** 24 p1
Set: 1 1

Re: Rx Condx Ref. No. 2 Date / Time: 12/30/98 4:35 CST

Re: Tx Condx Ref. No. 2 Operator: MWH

Data Measurements:

(1) On arrival -- - Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? YX / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -61.61 dBm Plot ID Code 24-D.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? YX / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -58.95 dBm Plot ID Code 24-E.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

Rx Site Data Log

Rx Site No. 24 p2
Set: 1 1

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y X / N___ Comments: _____.

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak --52.87 dBm Plot ID Code -- 24-N.

Comments: _____.

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak --_____ dBm Plot ID Code -- _____.

Comments: _____.

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.

Northpoint Technology – DBS Compatibility Test – Austin Test Area
Signal Strength Readings

Rx Site Data Log **Rx Site No.** 24

Set 1.1

Re: Condx Ref. No. 2 Date / Time 12/30/98 4:45 CST

Re: Condx Ref. No. 2 Operator: MWK

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	80	80	80	80	82	80	79	80	80	80	80.1
18	79	79	77	77	79	78	78	78	77	77	77.9
20	81	80	80	80	80	80	80	81	80	81	80.3

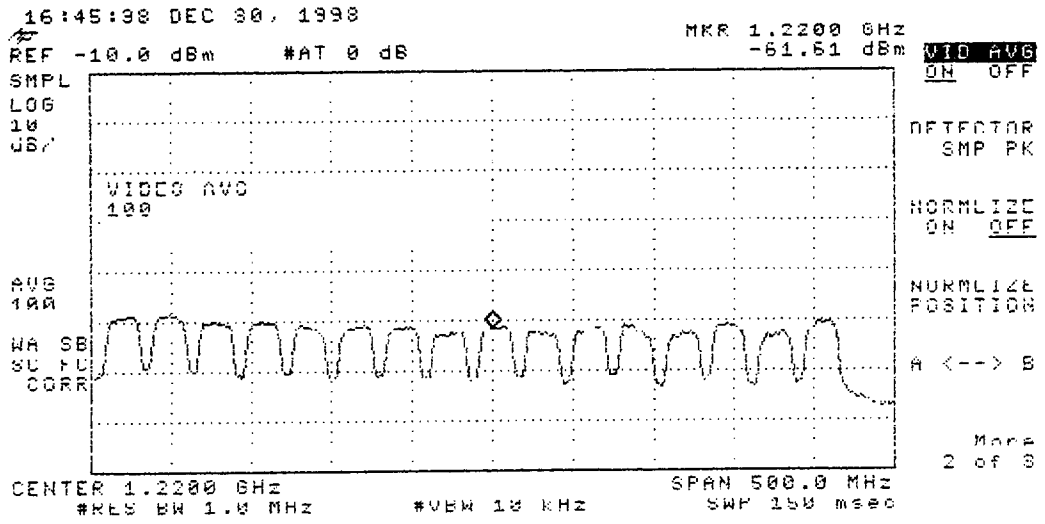
Estar T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	92	91	92	92	92	91	91	92	93	92	91.8
18	90	91	90	90	91	91	91	90	90	90	90.4
20	95	94	94	94	94	95	94	94	94	94	94.2

Notes: Clear 65°→70°

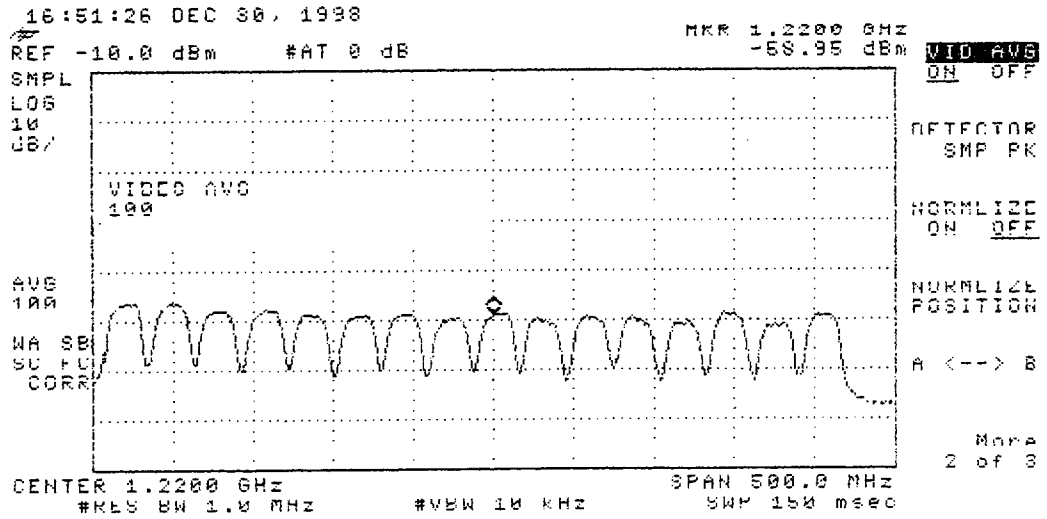
1. DTV, 12/30/98, Boom Down, Site-24

Plot-24-D



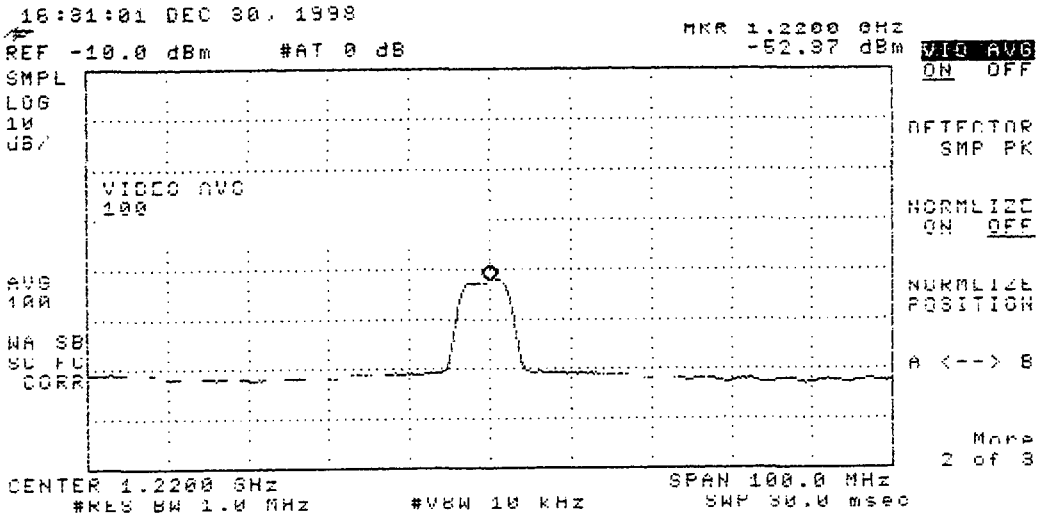
1, Estar, 12/30/98, Boom Down
Site-24

Plot-24-E



1, N, P, 12/30/98, Boom Down, Site-24

Plot-24-N



Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log

7th + Baylor

Rx Site No. 25 p1

Set: 1 / 1

Re: Rx Condx Ref. No. 2

Date / Time: 12/30/98 5:20 CST

Re: Tx Condx Ref. No. 2

Operator: MWH

Data Measurements:

(1) On arrival -- - Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____

Signal Power Spectrum – Tx ON: --Peak --60.79dBm Plot ID Code 25-D

Tx OFF: – Peak -- _____dBm Plot ID Code _____

Comments: _____

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____

Signal Power Spectrum – Tx ON: --Peak --59.18dBm Plot ID Code 25-E

Tx OFF: – Peak -- _____dBm Plot ID Code _____

Comments: _____

Rx Site Data Log

Rx Site No. 25 p2
Set: 1 1

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y X / N___ Comments: _____

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- -57.63 dBm Plot ID Code -- 25-N

Comments: _____

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- _____ dBm Plot ID Code -- _____

Comments: _____

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.

Northpoint Technology – DBS Compatibility Test – Austin Test Area
Signal Strength Readings

Rx Site Data Log

Rx Site No. 25

Set 1-1

Re: Condx Ref. No. 2

Date / Time 12/30/98 5:24 CST

Re: Condx Ref. No. 2

Operator: MWH

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	82	82	82	81	82	82	80	83	82	82	81.5
18	80	79	79	79	79	79	[illegible]	[illegible]	[illegible]	76	79.1
20	80	82	82	81	82	82	83	82	82	82	81.8

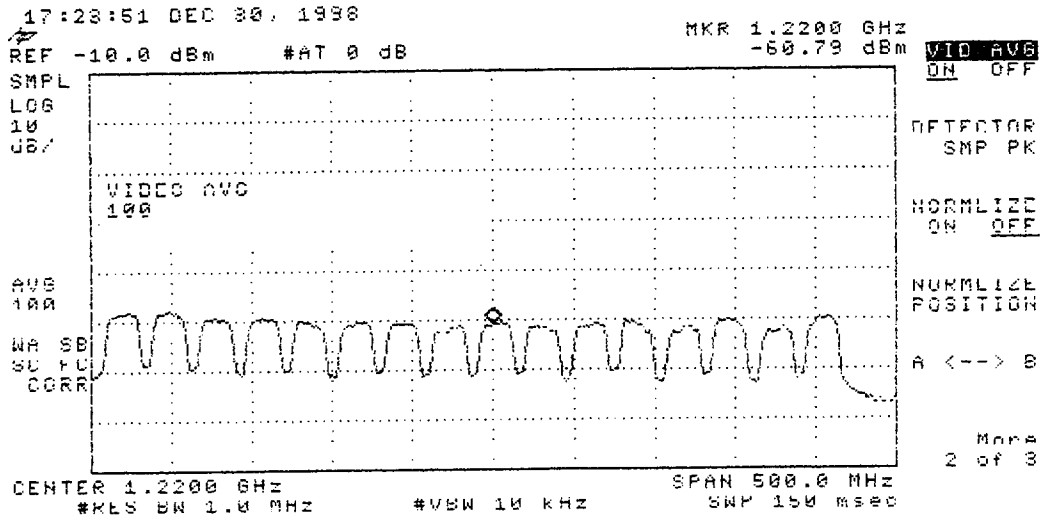
Estar T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	90	90	89	90	90	81	89	90	90	91	89
18	88	87	88	[illegible]	[illegible]	88	88	87	89	[illegible]	87.9
20	91	92	93	91	92	[illegible]	92	91	92	[illegible]	91.6

Notes: Clear 65°-70°

1. DTV, 12/30/98, Boom Down, Site-25

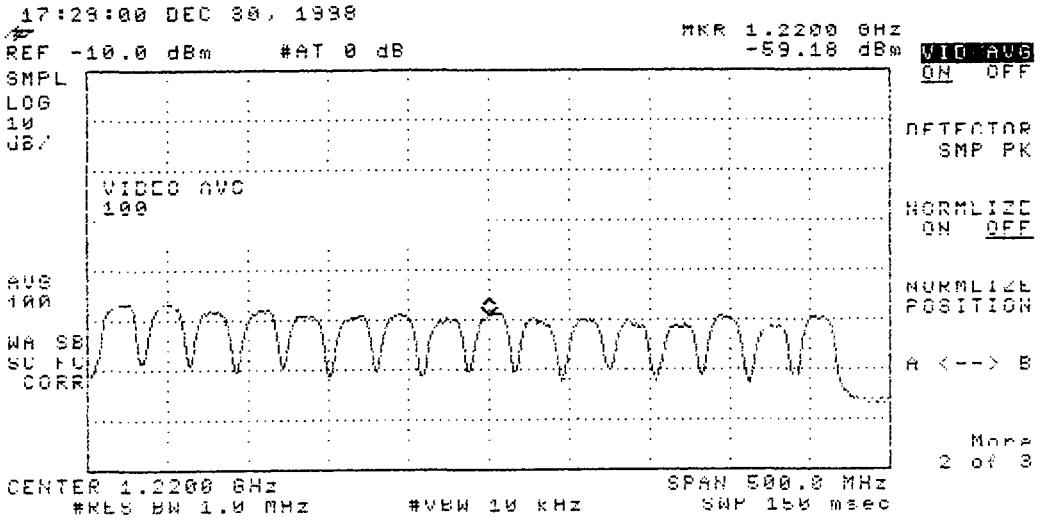
Plot 25-D



Note: Pointing through House and Power wires.

1. Estar, 12/30/98, Boom Down, Site-25

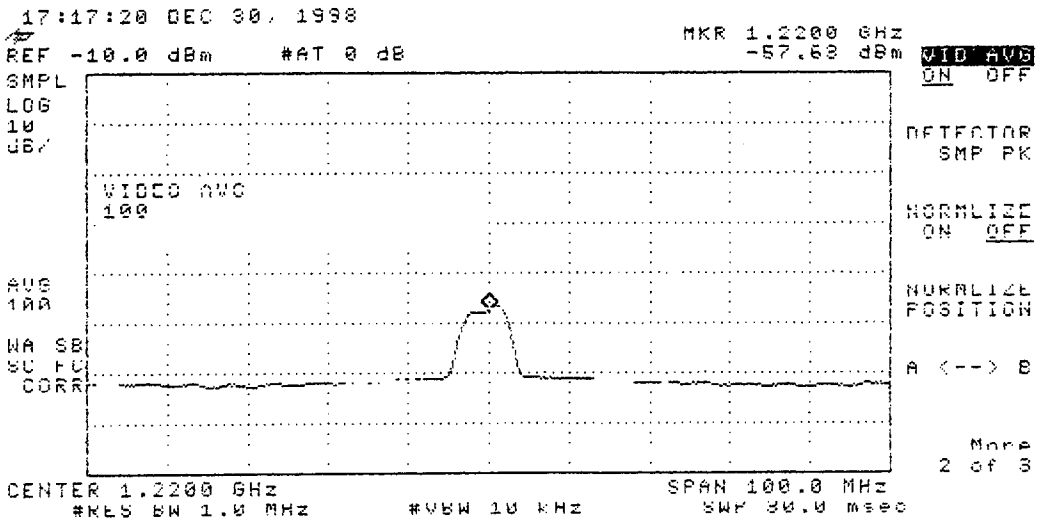
Plot-25-E



Note: Pointing through House and Power wires

1. N.P., Site-25, 12130198, Boom Down.
Picture Good on T.V.

Plot-25-N



Note: Pointing through a tree, power lines, & around a pole.

COMMENTS FROM SITE 25

Site 25 7th and Baylor

a. DTV and Estar pointing through house and power lines
b. NP pointing through a tree, power lines and around a pole.

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log

South West Pk. Way #1 Rx Site No. 26 p1

Set: 1 1

Re: Rx Condx Ref. No. 2 Date / Time: 12/31/98 11:30 CST

Re: Tx Condx Ref. No. 2 Operator: MWK

Data Measurements:

(1) On arrival -- - Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____

Signal Power Spectrum – Tx ON: --Peak -- -61.27 dBm Plot ID Code 26-D

Tx OFF: – Peak -- _____ dBm Plot ID Code _____

Comments: _____

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____

Signal Power Spectrum – Tx ON: --Peak -- -60.01 dBm Plot ID Code 26-E

Tx OFF: – Peak -- _____ dBm Plot ID Code _____

Comments: _____

Rx Site Data Log

Rx Site No. 26 p2
Set: 1 1

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y__ / N X Comments: Picture going in and out.

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- -64.09 dBm Plot ID Code -- 26-N

Comments: _____

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- _____ dBm Plot ID Code -- _____

Comments: _____

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.

Northpoint Technology – DBS Compatibility Test – Austin Test Area
Signal Strength Readings

Rx Site Data Log **Rx Site No.** 26

Set 1-1

Re: Condx Ref. No. 2 Date / Time 12/31/98 11:46 CST

Re: Condx Ref. No. 2 Operator: MH

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	81	82	81	82	79	82	80	81	81	80	80.9
18	78	79	80	80	80	79	79	78	79	79	79.1
20	83	82	81	80	82	83	82	81	82	82	81.8

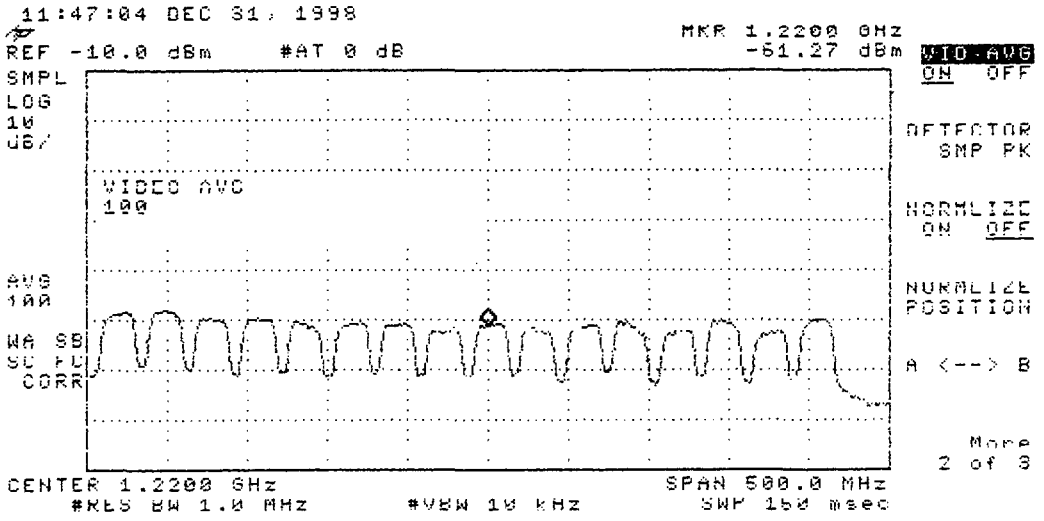
Estar T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	87	87	88	86	87	87	87	87	87	86	86.9
18	87	87	87	86	86	86	86	87	87	87	86.6
20	89	88	89	89	89	89	89	89	89	89	88.9

Notes: 1. Heavy fog, 60°-65°, Can Barley see Downtown Bld. Raining off and on,
2. Traffic going by & By High Volt. lines,

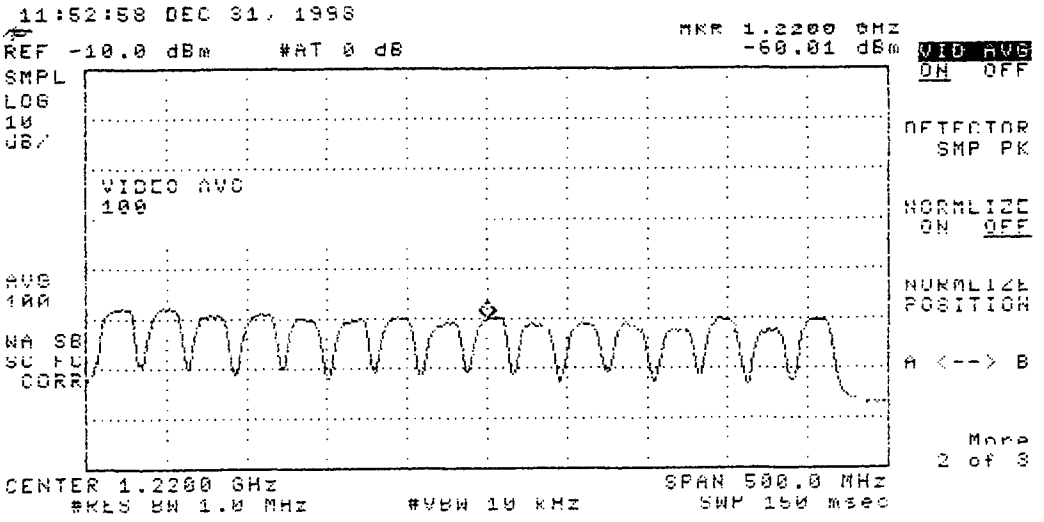
1. OTV, 12/31/98, Site-26
Boom Down

Plot-26-D



1. Estar, 12/31/98, Boom Down
Site-26

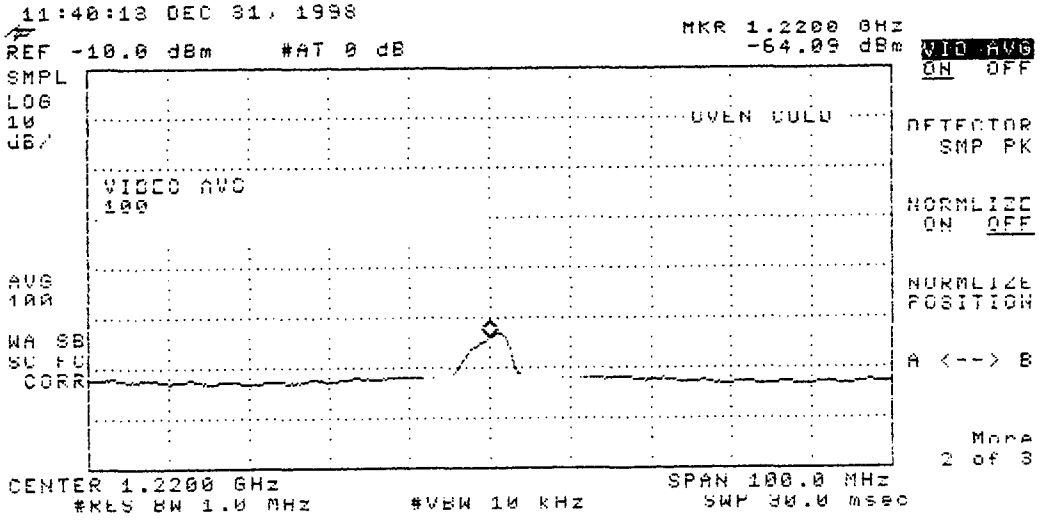
Plot-26-E



I. M.P., 12/31/98, Site-26

Boom Down

Plot 26-N



COMMENTS FROM SITE 26

Site 26 Southwest Park Way #1

a. Picture going in and out on NP
b. Heavy fog can barley see downtown buildings. Rain off and on. A lōt of traffic and high voltage power lines
c. Have steppe slopes on NP

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log South West Pk. Wy-2 **Rx Site No.** 27 p1
Set: 1/1

Re: Rx Condx Ref. No. 2 Date / Time: 12/31/98 12:20 CST

Re: Tx Condx Ref. No. 2 Operator: MWH

Data Measurements:

(1) On arrival -- - Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? YX / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____

Signal Power Spectrum – Tx ON: --Peak -- -60.98 dBm Plot ID Code 27-D
Tx OFF: – Peak -- _____dBm Plot ID Code _____
Comments: _____

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? YX / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____

Signal Power Spectrum – Tx ON: --Peak -- -60.32 dBm Plot ID Code 27-E
Tx OFF: – Peak -- _____dBm Plot ID Code _____
Comments: _____

Rx Site Data Log

Rx Site No. 27 p2
Set: 1 / 1

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y X / N___ Comments: _____

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- -59.00 dBm Plot ID Code -- 27-N

Comments: _____

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- _____ dBm Plot ID Code -- _____

Comments: _____

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.

Northpoint Technology – DBS Compatibility Test – Austin Test Area
Signal Strength Readings

Rx Site Data Log **Rx Site No.** 27

Set 1 1

Re: Condx Ref. No. 2 Date / Time 12/31/98 12:28 CST

Re: Condx Ref. No. 2 Operator: MLH

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	83	83	83	83	81	84	84	83	82	83	82.9
18	79	82	82	83	82	80	81	80	81	81	81.1
20	82	83	84	83	83	83	83	84	83	84	83.2

Estar T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	88	88	88	87	88	88	88	88	87	89	87.9
18	87	87	87	88	87	87	87	87	87	87	87.1
20	90	91	90	90	90	90	90	91	90	91	90.3

Notes: 60°-65°, Rain on and off, Can Barely see Downtown.
Heavy Fog (Haze).